

CLAIMS

1. A thin-film solar cell comprising an absorber layer, particularly of the CIS type, and at least one transparent window electrode disposed on the side on which light is incident, the said electrode comprising at least a first metal-base thin layer and at least one antireflective layer deposited on the side on which light is incident, situated opposite the absorber layer, characterized in that it additionally comprises, between the absorber layer and the metallic layer of the window electrode, at least one first highly refractive oxide or nitride layer.

2. A thin-film solar cell according to claim 1, characterized in that at least one of the dielectric layers is composed of zinc oxide.

3. A thin-film solar cell according to claim 1, characterized in that the metallic layer is composed of silver or silver alloy and in that the antireflective layer is a highly refractive oxide or nitride layer.

4. A thin-film solar cell according to any one of the preceding claims, characterized in that the window electrode is formed by a succession of layers comprising at least one dielectric layer, the said metallic layer and another dielectric layer.

5. A solar cell according to any one of the preceding claims, characterized in that the window electrode comprises in succession the said first highly refractive layer, the said first metallic layer, a second highly refractive layer, a second metallic layer and the said antireflective layer.

6. A thin-film solar cell according to any one of the preceding claims, characterized in that at least one of the highly refractive layers is composed of one of the oxides ZnO , SnO_2 , BiO_x ,

TiO₂, Al₂O₃ and/or one of the nitrides AlN, Si₃N₄.

7. A thin-film solar cell according to any one of the preceding claims, characterized in that it comprises a second electrode composed of at least one metallic layer and one highly refractive oxide or nitride layer.

8. A thin-film solar cell according to any one of the preceding claims, characterized in that the metallic layer of the window electrode, particularly a silver layer, has a thickness of less than 20 nm, and the total thickness of the window electrode is less than 120 nm.

9. A thin-film solar cell according to any one of the preceding claims, characterized in that a blocking layer is disposed between the metallic layer and one of the highly refractive layers.

10. A process for manufacture of a thin-film solar cell comprising an absorber layer as well as at least one transparent window electrode disposed on the side on which light is incident, with at least one metallic layer and one antireflective layer applied on the side on which light is incident, characterized in that it is manufactured in such a way that at least one highly refractive oxide or nitride layer is provided between the absorber layer and the metallic layer of the window electrode.

11. A process according to claim 10, characterized in that the window electrode is formed by a succession of layers with one thin metal-base layer between two highly refractive oxide or nitride layers.

12. A process according to claim 9, characterized in that the window electrode is formed by a succession of a first conductive dielectric or transparent layer, of the metal-base conductive layer

and of another conductive dielectric or transparent layer.

13. A process according to any one of the preceding claims, characterized in that the solar cell comprises a second electrode also made with at least one thin metallic layer and one highly refractive oxide or nitride layer.

14. A process according to one of claims 9 to 11, characterized in that the solar cell is made with an absorber layer of chalcopyrite.